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ABSTRACT

The National Teacher Examination (NTE) was given to a sample of 64 new trades and industrial (T&I) teachers attending 6-week workshops in Maryland during three summers. Each summer 18 to 25 teachers took the three tests in the Core Battery of the NTE, as well as a selection of other tests. The project sought to determine the pass-fail ratio of the new T&I teachers on each of the three tests in the Core Battery and to determine if the NTE scores could be predicted by using another standardized test that could be administered and scored in a short period of time. The study found that either the general ability test or the combination of vocabulary and comprehension tests would be useful instruments in counseling new T&I teacher recruits as to their likelihood of passing the NTE Core Battery. The study concluded that NTE scores can be predicted by other standardized tests for Maryland T&I teachers. Either the general ability test or the combination of the vocabulary and comprehensive tests produce respectable correlations with the three tests of the NTE Core Battery. According to the data collected during the three summers, approximately 40 percent of the T&I teacher recruits did not score high enough to pass the Core Battery. They had less difficulty with the General Knowledge test than with the other two tests. Data tables are provided. (KC)

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TRADES AND INDUSTRY TEACHERS

VS

NATIONAL TEACHER EXAMINATION

AND

PREDICTOR TESTS

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TRADES AND INDUSTRY TEACHERS
vs
NATIONAL TEACHER EXAMINATION AND PREDICTOR TESTS

National Teacher Exam. (NTE) Overview

The NTE consists of a Core Battery and Specialty Area Tests. The Core Battery includes three separate two-hour tests: Test of General Knowledge, Test of Communication Skills, and Test of Professional Knowledge. Each of these tests consists of four timed 30-minute subtests. In the Test of General Knowledge, the four subtests are Science, Mathematics, Social Studies, and Literature/Art. In the Test of Communication Skills, the four subtests are Listening, Reading, Writing Rules (Grammar), and Writing an Essay. In the Test of Professional Knowledge, the four subtests are each timed but the content is not categorized.

There are Specialty Area Tests for vocational teachers in areas such as Business Education and Home Economics Education, but there are no Specialty Area Tests for trades and industry teachers. It is obvious that the diversity of content in trades and industry programs would require many Specialty Area Tests instead of a common test and such a venture would be quite expensive. Since there were no Specialty Area Tests for trades and industry teachers, the trades and industry teachers in Maryland were expected to pass only the Core Battery.

When taking the Core Battery, it would be possible to overcome a weakness in one subtest by scoring high on another subtest within the same two-hour test. For example, in the General Knowledge Test a high score in Science would compensate for a low score in Social Studies. Only the total score in General Knowledge determines whether or not an individual passed the General Knowledge Test. It is possible to pass or fail any one of the three tests in the Core Battery. If an individual passed the General Knowledge Test and the Professional Knowledge Test but failed the Communication Skills Test, only the Communication Skills Test would be retaken.

Different subtests may vary in the number of items and an individual's score is not simply the total raw score. Each subtest score is weighted and the composite is then referred to a table to obtain the reported test score for the individual on each of the three tests in the Core Battery. There is no overall score for the Core Battery. The final test scores do not appear to be on a known standard score scale. On the edition of the NTE used for this effort, the lowest possible score for each test was 600 and the highest possible score was 690. Refer to the last page if you are interested in how a score is calculated.

Educational Testing Service reports internal consistency reliability coefficients of .90 to .94. The standard error of measurement is approximately four points on the reporting scale of 600 to 690. The validity of the Core Battery is based on what teacher educators say new teachers should have learned during their teacher training. No studies were located comparing Core Battery scores with teacher performance.

Maryland Trades and Industry (T&I) Teachers

There are trades and industry teachers in Maryland with degrees. Some have bachelor's degrees related to what they are teaching such as nurses, electrical engineers and industrial arts (technology education). There are some with bachelor's degrees in vocational-technical education, but these are usually completed as a part-time student while teaching rather than before teaching. There are others who have degrees with no obvious relationship to what they teach because they have made career changes for various reasons. There are also those with associates degrees usually in technical fields. Only those with degrees in education and/or training would have background in pedagogy. Most T&I teachers are skilled tradespeople with no background in pedagogy when deciding to become a trades and industry teacher. The local education agencies screen and select the prospective T&I teachers and then these new T&I teachers must complete a specified college level program to acquire a Standard Teaching Certificate. Eventually, they must also complete another program to acquire the Advanced Professional Teaching Certificate. These certification programs are usually completed during the teachers' early years of teaching.

The required courses for the T&I teacher Standard Teaching Certificate include Methods of Teaching, Course Construction, Laboratory Management, and Student Evaluation. There are other elective courses to select from in completing the Standard Certification requirements. Certification also requires satisfactory teaching experience; and since these teachers do not student teach, they cannot receive the Standard Teaching Certification until after they have been teaching a year or more (usually two years). This unusual arrangement of teacher training, beginning teaching, and getting certified made it difficult to determine when the new T&I teachers should take the NTE. It was decided that they should take the NTE after meeting all other requirements for the Standard Teaching Certificate. This meant a new T&I teacher might be teaching three years, then fail the NTE, and be dismissed from teaching. This would seriously disrupt a person's career after expending time and money to develop it. But more seriously, this practice would produce frequent teacher turnover in numerous vocational programs. The idea that the T&I teachers, with only a few courses in pedagogy, would be expected to perform on the NTE at the same level as those with degrees in education seemed unreasonable. Knowing that the NTE test had to be passed after a few years of teaching would produce uncertainty for the new T&I teacher and potentially disruptive to the vocational program. These potential problems created the need to determine the severity of such programmatic disruptions and devise techniques for preventing these problems.

TESTING THE TRADES AND INDUSTRY TEACHERS

Introduction

Each summer at the University of Maryland, a T&I Workshop is provided for new T&I teachers. They are on-campus full-time for six weeks. This provided a captive group of T&I teachers for testing. Permission to administer the 1983-84 NTE to this subpopulation of teachers was granted by Educational Testing Service for summers of 1985-87. Each summer 18 to 25 teachers took the three tests in the Core Battery of the NTE. They were also administered a selection of other tests to determine if any of the other tests could be used to predict the NTE results. The total sample tested was 64.

Purpose

There was a two fold purpose: 1) to determine the pass-fail ratio of the new T&I teachers on each of the three tests in the Core Battery; and 2) to determine if the scores could be predicted by using another standardized test that could be administered and scored in a short period of time. If a predictor test could be administered and scored in a few hours, a person likely to fail the NTE could readily be advised of this likelihood and the individual might decide not to become a teacher. Such a decision would avoid the later disappointment of having to leave teaching and find another job and also reduce the number of teacher changes in a vocational program. It would be more desirable that a tradesperson not leave the trade to take a teaching position and then become unemployed when failing the NTE. Also, it is undesirable to disrupt a vocational program every few years by teacher turnover. There was no intention of preventing a prospective T&I teacher from accepting a teaching position, but rather the predictor test would be used in counseling the individual. An individual is unlikely to expend the money and effort to complete the certification program and change occupations if such effort has little long term potential.

FINDINGS

Averages for Maryland and Nation

Averages on General Knowledge Test

	Social Studies	Mathematics	Literature/Art	Science
1985	19.3	18.0	21.7	20.4
1986	15.6	13.6	18.0	16.4
1987	16.1	14.6	20.1	16.3
National	18.4	14.6	23.1	18.4

Averages on Communication Skills Test

	Listening	Reading	Writing Rules	Essay
1985	26.5	16.0	21.7	5.6
1986	23.7	14.6	18.8	7.1
1987	25.4	23.4	18.9	5.8
National	28.7	19.2	27.4	7.2

Averages on Professional Knowledge

1985	51.6
1986	50.1
1987	57.4
National	65.0

Correlations between NTE and Selected Predictor Tests

	General Know.	Comm. Skills	Professional
		1985	
Gen. Ability	.9181	.9100	.8754
Vocabulary	.8669	.9122	.8931
Comprehension	.7067	.7855	.8082
Vocab./Comp.	.8288	.8885	.8887
		1986	
Gen. Ability	.7989	.7718	.7503
Vocabulary	.7813	.8496	.7810
Comprehension	.8566	.9523	.9573
Vocab./Comp.	.8200	.8963	.8420
		1987	
Gen. Ability	.9582	.7542	.8721
Vocabulary	.8916	.7143	.8075
Comprehension	.8472	.7406	.8933
Vocab./Comp.	.9244	.7581	.8735

A few other tests were tried during the three summers but none of the other instruments correlated well with the NTE tests. The Preprofessional test available from Educational Testing service as a premeasure for the NTE was not considered appropriate because it must be scored by Educational Testing Service and the results might not be returned for six months which would be too late for the intended counseling purpose.

The general ability test had consistently high correlations for the first and third years with all three NTE tests (not quite as high with Communication Skills as with General Knowledge and Professional Knowledge). This test is very appealing because it can be purchased for less than five dollars, be administered in thirty minutes and scored in less than five minutes. The combination of the vocabulary and comprehension tests had the most consistent correlations for all three years and these correlations were quite respectable. This combination of tests cost a little more, took an hour to administer and also took longer to score. Either the general ability test or the combination of vocabulary and comprehension tests would be useful instruments in counseling new T&I teacher recruits as to their likelihood of passing the NTE Core Battery.

Maryland Required Scores

The NTE was administered to a large sample of Maryland inservice teachers and the minimum passing scores were established from this sample. There was no attempt to compare the performance of subsamples such as elementary teachers versus high school teachers or academic teachers versus vocational teachers. Therefore, there is no data on how well the inservice vocational T&I teachers did on the statewide administration of the NTE. Maryland's minimum passing score for General Knowledge is 645 (10 percent of the inservice sample scored below 645). Maryland's minimum passing score for Communication Skills is 648 (21 percent of the inservice sample scored below 648). Maryland's minimum passing score for Professional Knowledge is 648 (15 percent of the inservice sample scored below 648).

Conclusions

The NTE scores can be predicted by other standardized tests for Maryland trade and industry teachers. Either the general ability test or the combination of the vocabulary and comprehensive tests produce respectable correlations with the three tests of the NTE Core Battery.

According to the data collected during the three summers, approximately 40 percent of the trades and industry teacher recruits did not score high enough to pass the Core Battery. They had less difficulty with the General Knowledge test than with the other two tests.

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Cooper, Kenneth J. "Computing Teacher Skills" The Washington Post--Education Review. November 18, 1990

Educational Testing Service. A Guide to the NTE Core Battery Tests. (1984) Box 911, Princeton, NJ 08541-0011

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SCORING PROCEDURE
for 1983
National Teacher Examination

General Knowledge

Social Studies (30 questions, 5 choices) x 1.1688 = _____.
Mathematics (25 questions, 5 choices) x 1.2243 = _____.
Literature/Art (35 questions, 5 choices) x 1.0000 = _____.
Science (30 questions, 5 choices) x 1.1666 = _____.

General Knowledge Total = _____.
Needed to pass = 68 = 645

Communication Knowledge

Listening (40 questions, 5 choices) x 2.3624 = _____.
Reading (30 questions, 5 choices) x 2.6313 = _____.
Writing-M.C. (45 questions, 5 choices x 1.0000 = _____.
Writing-Essay (12 points) x 3.8581 = _____.

Comm. Knowledge Total
Needed to pass = 141 = 648

Professional Knowledge

Section I (35 questions) = _____.
Section II (35 questions) = _____.
Section III (35 questions) = _____.
Section IV (35 questions) = Just Have Testing.

Prof. know Total
Needed to Pass = 56 = 648